

**IN THE CLAIMS**

**Please amend the claims as follows:**

Claim 1 (Currently Amended) An image encoding apparatus comprising:

a dictionary storage device configured to store a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

a converter ~~converted~~ configured to decompose a coding target image by using the plurality of bases on the basis of a predetermined conversion rule, and to convert the coding target image into basis information including,

index information to a basis used for decomposing the coding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored; and

an encoder configured to generate compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.

Claim 2 (Previously Presented) An image encoding method comprising:

decomposing a coding target image on the basis of a predetermined conversion rule by using a plurality of bases stored in dictionary storage device and converting the coding target image into basis information including,

index information to a basis used for decomposing the coding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored, wherein the plurality of bases are based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, and the predetermined two-dimensional function includes parameters for curving the predetermined two-dimensional pattern; and

generating compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.

Claim 3 (Original) An image encoding method according to claim 2, wherein the predetermined two-dimensional function further includes parameters for making the predetermined two-dimensional pattern move, rotate, and expand and shrink in two directions.

Claim 4 (Previously Presented) An image encoding method according to claim 2, wherein the encoding incorporates the parameters of each of the plurality of bases stored in the dictionary storage device in the compression data.

Claim 5 (Previously Presented) A computer readable medium encoded with a computer program configured to cause an information processing apparatus to execute a method, the method comprising:

storing a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

decomposing a coding target image by using the plurality of bases on the basis of a predetermined conversion rule, and converting the coding target image into basis information including,

index information to a basis used for decomposing the coding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored; and

generating compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.

Claim 6 (Currently Amended) An image decoding apparatus comprising:

a dictionary storage device configured to store a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

a decoder ~~decoder~~ configured to decode compression data and generate a basis information, the compression data including,

a compression code made by encoding the basis information including index information to a basis used for restoring a decoding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored; and

an inverse converter configured to generate the decoding target image by applying a predetermined inverse conversion rule to the basis information decoded by the decoder.

Claim 7 (Previously Presented) An image decoding method comprising:

decoding compression data including,

a compression code made by encoding basis information including index information to a basis used for restoring a decoding target image on the basis of a predetermined inverse conversion rule among a plurality of items of index information to a plurality of bases stored in a dictionary storage device,

a coefficient by which the basis specified by the index information is multiplied, and

positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored, wherein the plurality of bases are based on a predetermined two-dimensional function which generates a predetermined two-dimensional pattern and includes parameters for curving the two-dimensional pattern; and

generating the image to be decoded by applying a predetermined inverse conversion rule to the basis information decoded by the decoder.

Claim 8 (Original) An image decoding method according to claim 7, wherein the predetermined two-dimensional function further includes parameters for making the predetermined two-dimensional pattern move, rotate, and expand and shrink in two directions.

Claim 9 (Previously Presented) The image decoding method according to claim 7, wherein the decoder makes the dictionary storage device store the plurality of bases on the basis of parameters for generating each of the plurality of bases included in the compression data.

Claim 10 (Previously Presented) A computer readable medium encoded with a computer program configured to cause an information processing apparatus to execute a method, the method comprising:

storing a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

decoding compression data and generating a basis information, the compression data including,

a compression code made by encoding the basis information including index information to a basis used for restoring a decoding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored;  
and

generating the decoding target image by applying a predetermined inverse conversion rule to the basis information to be decoded.

Claim 11 (Previously Presented) An image encoding apparatus comprising:

dictionary storage means for storing a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

conversion means for decomposing a coding target image by using the plurality of bases on the basis of a predetermined conversion rule, and converting the coding target image into basis information including,

index information to a basis used for decomposing the coding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored; and

encoding means for generating compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.